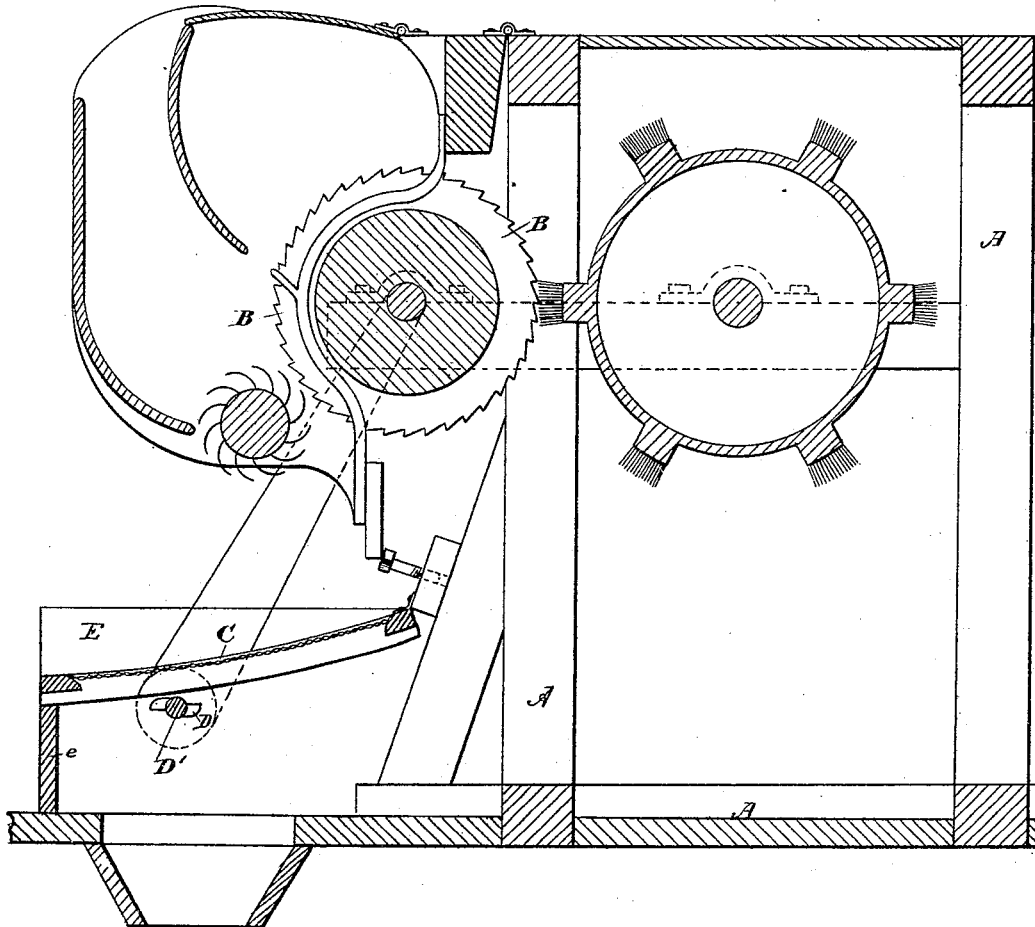


(No Model.)

W. A. SMITH.
COTTON GIN.

No. 265,452.

Patented Oct. 3, 1882.



Attest:
Geo. D. Smallwood Jr.
[Signature]

Inventor:
William A. Smith.
BY *[Signature]*
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UNITED STATES PATENT OFFICE.

WILLIAM A. SMITH, OF MEMPHIS, TENNESSEE.

COTTON-GIN.

SPECIFICATION forming part of Letters Patent No. 265,452, dated October 3, 1882.

Application filed January 30, 1882. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM A. SMITH, a citizen of the United States, residing in the taxing district of Memphis, in the county of Shelby, in the State of Tennessee, have invented an Improvement in Cotton-Gins, of which the following is a specification.

Much cotton is now gathered with a large admixture of bolls and trash and ginned upon what are known as "hulling-gins," which do not separate the hulls, but discharge them mixed with the seed. As cotton-seed is now a production of great and increasing importance, it becomes more and more desirable to obtain it in a clean condition, ready for the market.

My invention relates to means for separating cotton-seed from the pieces of cotton-boll, commonly called "hulls," mixed therewith on its discharge from a gin, and for this purpose I use a screen of woven wire or perforated plate, the meshes or openings being of such size as to allow of the passage of the cotton-seed while retaining the hulls. The screen is placed at any convenient position under the seed-fall of a gin of any construction, and is made of sufficient dimensions to receive all the seed and hulls falling therefrom. To this screen I impart by means of suitable mechanism a rapid tipping or jumping motion, such a motion having the advantage not possessed by any other of throwing the hulls clear of the screen with every vibration, leaving the meshes unobstructed for the passage of the seeds, the hulls and trash being thrown by the motion of the screen toward its lower end, and there discharged.

In order that my invention may be fully understood, I will proceed to describe it with reference to the accompanying drawing, which represents a vertical section of an apparatus embodying my invention.

A may represent the frame, and B the saws, of a gin of any common or preferred construction.

C is a screen for receiving the seed, hulls, and trash dropped therefrom. The screen may, as shown, project under the saws, so as to receive the seed, &c., directly therefrom; or I may provide a chute or hopper for receiving the same and delivering them onto the upper

end of the screen. The screen is preferably pivoted at its upper end to the gin-frame, as shown, and may be loosely supported at the lower end in any suitable manner. I have used and have illustrated in the drawing a box-formed receptacle, E, for containing the screen. Upon one side, *e*, the lower side of the screen rests loosely, this side of the box being cut away, as shown, to support the screen in a slanting position. Under the screen a cam or eccentric, D, on shaft D' has bearing for the purpose, when actuated by suitable driving mechanism, of giving the screen a rapid jumping or tipping motion, so as to throw the hulls and trash clear of the meshes and allow the seeds free passage therethrough, the meshes in the screen being of such size as to prevent the passage of the hulls and trash, while permitting that of the seeds. The cam-shaft D' has bearing in the sides of the box, as shown, and is driven by belt from the saw-cylinder or other means.

Instead of a shaker or eccentric under the screen, I may use two eccentrics, one at each end of the screen, which may be so set as to alternately actuate it and give the screen a tipping motion from end to end.

I am aware that many devices have been before employed to separate cotton-seeds from the hulls and trash, and that stationary, sliding, shaking, revolving, and rocking screens have been used for this purpose; but I am not aware that it has ever before been proposed to apply a screen to which a jumping or tipping motion is imparted directly to the seed-fall of a gin, the hulling and seed-cleaning being practically one continuous operation. With a shaking, rolling, or rocking screen the hulls lie directly on the screen and obstruct the meshes, making it necessary for thorough work to provide a screen of large size, taking up more room than can often be conveniently allowed. With a screen operated as I have described—namely, by giving it a jumping or tipping motion—the whole mass of seeds, hulls, and trash resting on the screen is thrown bodily into the air at each vibration of the screen, so that the meshes of the screen are left free for the passage of the seeds, which by reason of their small size and greater gravity return first

thereto. My device is compact and susceptible of being placed where a large one could not be used. While it was customary to make the shaking-screens formerly tried for this purpose of great dimensions—twenty feet in one direction by the length of the saw-cylinder in the other—a screen of the length of the saw-cylinder and two feet in width, actuated as I have described, will perfectly clear the seed. The great room required for the shaking-screens and their ineffectiveness have caused their entire abandonment, rotary screens being now almost altogether used for this purpose.

I claim—

In combination with a cotton-gin, a screen for separating cotton-seed from the bolls and trash, placed, substantially as described, to receive the same directly from the gin, and suitable mechanism for imparting a jumping or tipping motion to the said screen, for the purpose and in the manner hereinbefore set forth.

W. A. SMITH.

Witnesses:

H. M. WHITE,
I. E. CARVER.